[0009] U.S. Pat. No. 5,414,445 for an Ergonomic Pointing Device assigned to Microsoft Corporation was issued in 1995. The '445 patent asserts that by enlarging and modifying the shape of a mouse that the user's fatigue will be decreased through positioning the user's lower palm on a work surface such that the user's hand plane is supported by the pointing device and the user's fingers are placed in a neutral posture to control the keys on the device without the need to compress or reach. The '445 patent notes that every user is different in physical size and physical proportions and suggests that the solution is a one that does not force user's into a tightly defined "grip architecture".

[0010] U.S. Pat. No. 5,530,455 for a Roller Mouse for Implementing Scrolling in Windows Applications assigned to Mouse Systems Corporation issued in 1996. The '455 patent adds a roller to the mouse on the top front of the mouse so that the roller is within finger reach of the three input control switches. The mouse is used in a conventional way to provide x-y input to move the icon on the display. Operation of the roller moves the displayed image in the y direction on the display ("scrolling"), or if the thumb is depressing a "shift" key the movement of the roller causes the displayed image to move in the x direction ("panning").

[0011] U.S. Pat. No. 5,570,112 for Ergonomic Computer Mouse issued in 1996. The '112 patent teaches changing the mouse design from a hard outer housing to a soft foam rubber pad intended to support the wrist and palm of the user in comfort. The rubber pad is covered by a thin fabric material and otherwise operates as a conventional mouse.

[0012] U.S. Pat. No. 5,576,733 for Ergonomic Computer Mouse issued in 1996. The '733 patent attempts to minimize fatigue, discomfort and pain from sessions of extended mouse use by changing the orientation of the user's hand from generally parallel to the desk or work surface to a generally upright hand with the four fingers of the user's hand in extended but slightly bent positions in a generally upright stack with the thumb supported on the opposite side of the mouse.

[0013] U.S. Pat. No. 5,726,683 for Ergonomic Computer Mouse assigned to Midas Mouse International Pty issued in 1998. The '683 patent teaches a mouse with a smooth hard, curved housing that allows the mouse to be gripped with the ring and little finger on one face of the mouse opposing the thumb on the opposite face. The index and middle finger are curved over the top and front face of the mouse where the one or more buttons are located. While the applicants for the '683 patent assert that it is measurably superior to other commercial mouse products as indicated by EMG activity level studies, the mouse requires an x-y motion of the hand to effectuate an x-y input as do other prior art mice.

OTHER POINTING DEVICES

[0014] U.S. Pat. No. 5,543,590 for an Object Position Detector with Edge Motion Feature assigned to Synaptics, Incorporated issued in 1996 as one of several related patent applications arising from an application filed in 1992. The '590 patent describes an input pad for receiving x-y input and tap signals as an alternative to a mouse type device. As it is a capacitance sensing system, the sensing mechanism does not require that the user actually touch the surface of the touchpad in order for the mechanism to sense the user's finger. The patent asserts that this feature can be used to reduce strain on the user. The text of the patent (such as column **27**) describe the implementation of a "glide" feature whereby a user can slide the user's finger onto one of the outer edges of the pointing device to input a "glide" command to have the position icon move in the indicated direction as long as the user's finger remains in this perimeter position. Thus the touchpad effectively has an x-y input zone for translating movements of the finger tip into x-y movements of the icon on the displayed image, and several predefined "edge motion" glide input zones for the user to input an ongoing request for continued movement of the icon in any of the corresponding directions as long as the user's finger remains in the glide input zone.

[0015] U.S. Pat. No. 5,748,185 for Touchpad with Scroll and Pan Regions assigned to Stratos Product Development Group issued in 1998. The '185 patent teaches the use of a cursor control region, a scroll control region, and a pan control region, defined as separate areas in a touchpad. Movement of the contact point in the cursor control region causes movement of the cursor in the graphical user interface. Movement of a contact point in a scroll control or pan control region causes scrolling or panning respectively of the workspace in the Graphical User Interface (GUI).

[0016] U.S. Pat. No. 5,943,052 for Method and Apparatus for Scroll Bar Control assigned to Synaptics Incorporated issued in 1999. It teaches the use of a scroll zone having a central axis defined on a touchpad. The patent teaches the use of software to scroll the information in an active window owned by the operating system or software application. The software is adapted to not scroll based on finger input that is not substantially parallel to the axis of the scroll zone.

[0017] U.S. Pat. No. 6,031,518 for Ergonomic Input Device assigned to Microsoft Corporation issued in 2000. The disclosed device is like a mouse in that it is a pointing device to be placed on top of the work space and is shaped to accommodate the geometry of the hand and fingers. Unlike a mouse, it does not require x-y motion of the mouse to effectuate an x-y motion of the position icon on the display. The actuators on this device are: a track ball positioned to be manipulated by the index finger, keys positioned to be operated by the thumb, and a scrolling wheel positioned to be operated by the middle finger. As shown best in **FIG. 3**, the device of the '518 patent continues to place the hand wrist down on the table with fingers pivoted upward to operate the various actuators.

[0018] Thus, while there have been many incremental improvements to the mouse device as well as a search for mouse alternatives such as devices employing touchpads, there are longstanding and previously unsolved problems with prior pointing devices.

PROBLEMS ASSOCIATED WITH PRIOR ART SOLUTIONS

[0019] Applicant hereby incorporates by reference the following articles and will subsequently refer back to these references as REF**1** through REF**7**, respectively.

[0020] REF**1**:*Repetitive Motion Disorders* statistical graph based on Bureau of Labor Statistics University of California, San Francisco and University of California, Berkeley Ergonomics Program 1999

[0021] REF**2**:*Table* **3**. Number and Percent of nonfatal occupational injuries and illnesses involving days away